

PANEL DISCUSSION
THE FUTURE OF CALIFORNIA'S FLORISTIC
HERITAGE ON PUBLIC LANDS

The future of California's floristic heritage is entwined with the future of its public lands. Approximately half of California, 50 million acres, is public land. The federal government administers 92 percent of these public lands. The USDA-Forest Service (20 million acres), Bureau of Land Management (17 million acres) and the National Park Service (nearly 5 million acres) are the largest federal landowners in California. State government manages 5 percent of the public land and local governments manage 3 percent. Some plant species and communities are restricted to one agency's jurisdiction, while many others occur across agency boundaries. Coordination between government agencies is critical for successful plant conservation. These government agencies need public support to effectively protect, restore and manage plant habitats.

A panel of botanists and biologists from key regulatory and land managing agencies assembled at the Jepson Symposium, to discuss the challenges that government agencies are facing and the role of concerned citizens in influencing the future of California's public lands.

Moderator: Ken Berg, Bureau of Land Management

Panel members: Sarah Allen, National Park Service; Jan Knight, US Fish and Wildlife Service; Sandra Morey, California Department of Fish and Game; Jim Shevock, USDA Forest Service; John Willoughby, Bureau of Land Management

BERG: "California has a history of boom-and-bust economic cycles. For the last few years, the state has been in an economic recession. What should California plant conservationists be doing now, to prepare for future human population growth?"

WILLOUGHBY: "In responding to this question I'll focus most of my attention on the conservation of rare plants. Conserving plant communities, however, is equally important. Many of the points I make relative to rare plant conservation apply equally to plant community conservation. I'll conclude with a few comments on plant communities.

"There are three basic things we need to do, and as quickly as possible: 1) we need to identify those rare plants most likely to be threatened by the increased pressures that will come from human

population increases; 2) we need to identify the occurrences that are most important to these species' viability (a greatly overused term); and 3) we need to preserve the habitats at all these occurrences in perpetuity. We also need to take a fourth action, one that is equal in importance to the others but is too often given short shrift: we need to monitor the populations and habitat we are conserving to ensure our conservation objectives are being met.

"None of this, of course, is new to any of us. We've all been involved in identifying plants that are threatened and endangered for a long time. The California Native Plant Society recently published its fifth edition of the *Inventory of Rare and Endangered Vascular Plants of California* (the first edition was published in 1974). The California Natural Diversity Base has been tracking most of the State's rare plants since the late 1970's and Federal and State agencies have also been involved in this effort at least since the 1970's.

"I maintain, however, that we haven't done a good enough job. That's certainly true for my agency, I suspect it's true for other public lands, and I know it's true for private lands. The information base is definitely better than it was in 1974, when the first edition of the CNPS *Inventory* was published. But it is not even close to being adequate to make the kind of tradeoffs that future land management (and I'm speaking here of management of all lands, including private) will likely require.

"Let me give you an example involving some plants I'm familiar with. A few years ago the Fish and Wildlife Service became concerned that several plant species in the San Joaquin Valley were heading toward extinction. In order to better determine this they let a very modest study to determine the status of these species. The contractor looked at all the herbarium specimens that could be found for these species. All of these documented collection sites were visited (or at least approximately visited) and an assessment made of the habitat integrity at each site. Because the lion's share of these historic sites were no longer considered habitat for the species, the contractor and the Fish and Wildlife Service determined that the species were severely threatened.

"As a result of this study, in June 1990 four San Joaquin Valley plant species were listed as endangered species: *Caulanthus californicus* (Wats.) Pays., *Lembertia congdonii* (Gray) Greene, *Eremalche kernensis* C.B. Wolf, and *Eriastrum hooveri* (Jeps.) Mason. At the time of listing, BLM had very little knowledge of any of these species. Shortly after listing, BLM decided it had better find something out about the species. BLM is responsible for issuing oil and gas leases within the habitat of these species and administers many livestock grazing leases in the area as well.

"In the years since 1990, concerted inventory efforts on the part

of BLM have documented significant new occurrences of two of the listed species—627 new occurrences of *Eriastrum hooveri* and 535 new occurrences of *Lembertia congdonii*, all on public lands. We believe the need for at least *Eriastrum hooveri* to continue to be listed has been called into question.

“Now, I’m not giving this example to criticize the contractor for the study that was done—the study was entirely appropriate and the amount of work done to gather the information contained in the contractor’s report went far beyond what one would expect from the amount of money expended on the study. Nor am I criticizing the Fish and Wildlife Service for listing these two species. That agency is required to act on the best scientific data available, and the best scientific data at the time indicated the species should be listed and listed soon. Rather, I use this example to highlight the fact that we know very little about many of our rare plant species.

“We need to spend a lot more time and effort in inventorying our lands. The BLM waited until the species were listed to gather the information it should have had years before, but, because of budget restraints and other priorities, my agency simply did not collect the necessary data.

“If we don’t have adequate knowledge of the distribution and status of our plant species, we’re going to make a lot of mistakes. And mistakes are not good. Even if we err on the side of the species, we’re going to lose a lot of credibility if we do this very often. This is especially critical on private lands.

“Though our information base is bad on public lands, it is even worse on private lands. Most of our information on private lands, and probably the majority of it on public lands, comes as a result of conducting surveys in conjunction with the preparation of environmental documents. While this information is valuable, it is far from complete. On public lands we spend a lot of time in clearing parcels for projects. What we learn in most cases is negative information—we learn where the species isn’t, not where it is. (Exceptions to this are long, linear projects—e.g., pipelines, transmission corridors—which tend to function as long transects through large areas and yield a lot of information when they cross areas that have not been botanized).

“Proactive inventories, focused on individual species or large areas, yield much more valuable information concerning the distribution, abundance, and status of plant species. These types of inventories, which the BLM has conducted since 1990 on the public lands of the San Joaquin Valley, are almost nonexistent on private lands. Somehow we need to figure out ways of conducting such proactive inventories on private lands. It won’t be easy in today’s political climate, but we must make the effort by working with counties and cities in a nonthreatening manner.

“Inventory will help us decide what occurrences are most important, but this will not be enough. In many cases we will be forced to guess as to how many occurrences are enough, how large they should be, and where they should be. Demographic studies—for those species that lend themselves to these types of studies—will be required for some species. These studies will not determine true “viability” thresholds for such species—for I’m not convinced that’s achievable—but they will at least enable us to make more educated guesses as to the appropriate size, location, and number of occurrences necessary to sustain the species.

“Once we have identified those occurrences that are most important, we then must assess the likelihood that these occurrences will persist under present and future management. A gap analysis, similar in many ways to what Frank Davis and others at UC Santa Barbara are involved in for terrestrial vertebrates, will be required for plants. The Natural Heritage Division of the California Department of Fish and Game has made a significant start in this, but is hampered by the lack of inventory information noted above.

“Once we determine the occurrences in need of protection, we must find ways of preserving these areas. Protection doesn’t necessarily mean fencing out all human activities and leaving an area alone. Active management will be required in many cases to mimic the types of natural processes under which the target species thrive.

“Those agencies responsible for natural land management must stop being parochial in their management. Ecosystem management and the conservation of biological diversity require that we plan based on ecosystem boundaries—this means we need to work with counties and cities and find ways of protecting species on private as well as public lands.

“Monitoring of those areas managed to conserve rare plants is critical to determine whether conservation objectives are being achieved. This monitoring may be qualitative or quantitative—both types are appropriate depending on individual situations—but it must be done on a continuing basis. Regardless of what we would like to believe, the actions we prescribe to conserve plant species will often fail; we need to recognize (early) when this is occurring and change our management prescriptions accordingly. We can’t do this without monitoring.

“The same kind of needs exist for plant communities as for rare plants. The problem is we haven’t been spending nearly enough effort on the identification and protection of rare—as well as good expressions of common—plant communities as we have on rare plants.

“Part of the reason for this is there is no law requiring the conservation of plant communities. Another problem is that plant communities are more of an abstract concept than are species, and there is often disagreement over plant community classification schemes

(it is the lumpers-and-splitters argument common in taxonomy taken to a higher power). But there is hope on the horizon. Several agencies have adopted the community classification scheme of Holland (1986), at least on an interim basis, and the California Native Plant Society has recently issued a draft document entitled *Series Descriptions of California Vegetation* (Sawyer 1994). We need to support the work that has been done and to continue our efforts in conserving the vegetation diversity that is so important to California."

MOREY: "One of the most critical issues facing California plant conservationists now is the proposed amendment of the California Endangered Species Act. Several pieces of legislation have been proposed which will change the ways plants are protected, how land use planning will work, who will be making important decisions, and where money will be spent. Business and industry coalitions are very organized and informed, and are calling for major changes in CESA, some of which would drastically weaken plant protection. It is critical for plant conservationists to be informed and vocal, and to fight for amendments which will strengthen our ability to conserve plants. Conservationists must be strongly heard now, especially in the State's current political climate."

SHEVOCK: "Clearly the conservation strategies of the past as viewed by single land use allocations (such as preserves, wilderness, etc.) will have limited success in the future. First of all, we are running out of acres where single land use allocations are available. Acquisition costs per acre may also restrict this type of activity. Regardless of how the land is acquired, one still has to provide for its long-term management, and humans are part of that equation. We as conservation biologists need to assist in creating a conservation ethic in California where humans have a meaningful and tangible relationship to their environment, they understand the need to conserve resources, and actively participate in the process.

"As I look out over the audience in this session, we clearly do not represent a cross-section of the diversity of California. Scotland perhaps but not California! The 1990 census already reflects a large shift in demographics and increases in persons of color as a majority in the near future.

"Are Californians going to vote for conservation based initiatives and ballot propositions if they lack the reasons why conservation is important to the state and their quality of life or for future generations? Why has the conservation/environmental movement not attracted persons of color in any meaningful way?

"Somehow, we as concerned resource professionals have to develop a process to involve other cultures, be completely inclusive, and form new partnerships. Obviously, a lot more than biology is involved in conservation.

“Education and awareness are needed at every level to develop a conservation ethic, one where economic models or short-term profits are not the only driving force in our decision-making process. Conservation will be successful and sustainable when we integrate people as part of the ecological system rather than trying to remove them from it.”

KNIGHT: “Plant conservationists can be thinking and working in both the short and long term. To deal with inevitable growth in the short term, conservationists can support California Native Plant Society chapter involvement in local land use planning issues and advocate habitat- or ecosystem-based planning for biological resources, whenever possible. Local planning agencies give varying degrees of attention to rare plant resources in land use plan development. Once general plans are in place, it is difficult to obtain protection for large habitat areas for plants.

“We continually find ourselves in the situation of project by project mitigation under the California Environmental Quality Act or the federal Endangered Species Act, with no mechanism to step back and look at regional conservation strategies that would be ecologically more desirable. Over time, I suspect that many rare plant populations will suffer from this approach, even though they have been “protected” from outright project impacts.

“Also, plant conservationists can look for and develop stronger ties with non-traditional allies such as the livestock industry. Livestock use under informed management may be compatible with recovery needs of many rare plants. Much of the remaining wildlands of the foothills and lower elevations is privately-owned rangeland that is under increasing development pressure. A real opportunity exists for productive partnerships between conservation groups and the ranching community that owns significant habitat for a number of rare plants.

“In the long-term, conservationists can work to instill conservation as a value and priority in younger generations. We all need to do what we can to develop a stronger societal appreciation and awareness for the relationships between standard of living/life-style choices, population growth, and our natural resources.”

ALLEN: “There are several things individuals can do, from public service to personal decisions: 1) Contribute to and support family planning groups that advocate zero population growth; 2) support agencies and groups to protect lands from development so that there are corridors between large protected lands; 3) educate our children today so that they will be decision makers of the future with the skills needed to preserve, protect, and restore natural resources.”

BERG: “These are difficult fiscal times for public agencies. Budgets and staffing are declining. It is extremely challenging for the agencies

to effectively manage the land with increasing population pressures. What are the three most important things plant lovers can do to help your agency do a better job of conserving native plant habitats?"

SHEVOCK: "The first item is to inform agency administrators of the unique resources that they are to manage for the American people by providing new and/or timely information as it becomes available. Forest Service managers need to have access to the most recent scientific information. Managers also need to be reminded from time to time of the wealth of biodiversity on the national forests and grasslands by members of the public.

"The second item is to be involved. Yes, I know we all hear it, but it really works. If it were not for the efforts of the California Native Plant Society to raise botanical issues to the Forest Service during our land management planning efforts, it is my opinion that our plant program would not have as many full-time professional botanists on staff nor would we have established nearly 75 botanical areas on the National Forests in California or be viewed as a leader in federal rare plant management and conservation.

"The third item is to thank land managers when they do actions that conserve species and their habitats. Being a squeaky wheel gets initial attention, then it's important to follow-up with professional contacts and continued correspondence by building partnerships."

ALLEN: "Develop ties with your congressional (state and federal) representatives in order to develop programs to support the professionalization of National Park Service employees so that more botanists can be hired. Let them know that you care about National Parks in your area. Get involved in regional councils in California where cooperative planning between agencies, businesses, and private individuals for protection of landscapes is going on now. Volunteer for plant restoration programs in a park near you."

MOREY: "Be a vocal constituency. Sometimes decisions are made based on who speaks the loudest. We should broaden our plant conservation constituency with untapped sources of support. Public polls say the number one leisure activity is gardening and that the public believes protecting the environment is important. Maybe we can join forces with groups such as the Nurseryman's Association, or begin to work with our traditional enemies such as the Cattleman's Association.

"The academic community can focus research on questions that will help us more effectively protect and manage plant populations and habitats. We need academic experts to act as our advisors to guide our work and strengthen our positions with scientific documentation. We also need expert testimony in public forums such as at Fish and Game Commission meetings. The testimony of a whole

host of prominent scientists, for example, was very important in our efforts to list the Vail Lake ceanothus as an endangered species.

“Get involved in local land use issues and participate in local conservation planning groups. Share local knowledge of plants, animals, and communities, serve on scientific advisory groups and biodiversity councils.”

KNIGHT: “One area in which non-agency plant advocates already are invaluable and that always will be important for this agency, is information. The agency does not have the resources to determine the status and distribution, local threats, and keep up with other local issues that affect all of the candidate plant taxa in California. We rely on grassroots contacts for these kinds of information for many species. We are much more effective within our regulatory scope when we have knowledgeable and reliable local contacts.

“Another way in which non-agency plant advocates can help the Service do a better job of conserving native plant habitats is by providing a strong voice in land use planning and other conservation issues at the local, state, and national level. Local politicians need to hear often and adamantly that rare plant habitat conservation should be implemented in local land use decisions. As I mentioned above, support of a conservation organization in which plants are a conservation priority, such as CNPS, can be effective. An example of a significant national issue for this agency is Endangered Species Act (ESA) reauthorization. Anti-ESA forces that wish to take the teeth out of the ESA in the guise of “improving” it are stronger than ever. All-out effort from the conservation community will be needed to maintain existing ESA protections.

“A third area in which non-agency plant advocates can assist the Service in conserving native plant habitats is developing the non-traditional alliances mentioned above that further the long-term goals of rare plant conservation. Partnerships with owners of some of the best or, in some cases, only remaining native habitat, seems to me to be something that needs to be seriously pursued to complete the overall conservation picture. In California, it is evident that resource agencies never will have the financial resources to purchase and then manage enough habitat that needs protection. Private non-profit organizations cannot provide this function either. The conservation community can develop ways to find and work with receptive landowners to achieve conservation objectives while the land is used also for other purposes, and for economic return. New economic and regulatory incentives could increase the number of receptive landowners, and more probably are needed than exist now before this approach could really be effective.”

WILLOUGHBY: “Plant lovers need to work more closely with their local agencies and let their concerns be known. It’s not for no reason

that agencies have tended to give more attention (in terms of both money and work effort) to charismatic megafauna and species that are, in the words of a eminent official of the California Department of Fish and Game (who also recognizes this problem), "shot or drug around by the lips." These species have very prominent and vocal constituencies. Those of us interested in plant conservation must take lessons from effective interest groups such as Ducks Unlimited and the American Fisheries Society.

"Plant lovers need to let those in charge of land management agencies know they are very concerned about the plants that occur on the public lands. They should let agencies know of problem situations in a constructive and positive manner.

"When an agency has a success story, recognize it—publish it in newsletters, let the manager and staff know you're pleased. Likely, more such successes will then follow.

"Plant lovers should offer volunteer work parties to assist agencies in special projects, such as restoration work and inventories of specific areas or for particular species.

"Plant lovers should let their elected representatives know about their concerns. Many of you would be surprised at the hoops bureaucrats have to jump through when they get a letter from a Congressman or State legislator. If there are enough hoops, pretty soon the bureaucrat will get tired of jumping and figure out a way of eliminating them—such as by conserving the plant species."

QUESTION #3:

BERG: "American society has very high expectations of its leaders. But we live in a large and complex country and government agencies are unwieldy bureaucracies. The influence of any one person, regardless of job title, is limited in a large agency like the Forest Service, which has 30,000 employees. If you could be Director/Chief of your agency for a day and make 2 proclamations, what would they be?"

ALLEN: "IT'S PLANTS, STUPID. Remember always the NPS adage: 'know, restore, maintain and protect.'"

KNIGHT: "After proclaiming that I would continue indefinitely as Director, I would work with programs on lands owned and managed by the Fish and Wildlife Service.

"I would modify priorities and program emphasis to ensure that the agency's own lands are managed for all biological resources, even if it means less than optimum or otherwise desired production of wildlife resources for which these lands normally are managed. Each refuge has its own purpose and a highly individual program, and authorities and policies would need to be dealt with.

"Determining the status of all sensitive species, including rare plants, on Service lands would become a high priority. The habitat

and other ecological needs of these species then would be identified and integrated into refuge management strategies. The Service should set an example for enlightened ecosystem management for other land management agencies.”

MOREY: “I would proclaim that plants will no longer be treated as second class citizens. Currently less than 1 percent of Department of Fish and Game staff positions are botanists. I would begin using our lists of qualified applicants to put staff with botanical/plant ecology expertise in areas where they are critically needed. I would also institute an internal training program for all levels in the Department to increase awareness/knowledge of/appreciation for plants and plant conservation issues so that we would have a bigger and stronger work force actively fighting to conserve and protect our flora.

“I would change the name of the Department of Fish and Game. This visible change would reflect and facilitate the change in the Department’s emphasis beyond the traditional game focus to encompass its broader focus of ecosystem and biodiversity conservation.”

SHEVOCK: “It is so compelling to ask for more money to increase plant conservation and for hiring additional botanists, but I’d refrain from making those kind of “wish list” proclamations. Rather, I’d focus on proclamations that address fundamental land resource ethics and behaviors.

“I would make a proclamation that reinforces our current agency *Mission, Vision, and Guiding Principles* and highlight sensitive plant (and animal) species as the rarest of the natural renewable resources under our charge. I would proclaim that these species and their habitats are the foundation of ecosystem management and that they are not to be viewed as constraints to other resource programs.”

WILLOUGHBY: “My first proclamation would be that I could make an unlimited number of proclamations. However, since neither Aladdin’s genie nor you will let me get away with this I’ll settle for the following two proclamations: 1. Commodity uses of public land resources will be authorized only after we are sure the native ecosystem will be sustained. This is actually very similar to directives that have already come down from BLM’s Director: to manage on an ecosystem basis, to preserve biological diversity, and to ensure sustainable development. 2. If, because of limited personnel and funding, we can’t assess, through monitoring, whether our management is in fact achieving our objectives, then we should either not authorize any commodity use at all, or we should authorize it at such a minimal level we can be reasonably sure it is not impacting biological diversity nor threatening the sustainability of ecosystems.

“Proclamations, of course, are the easy part (particularly since everyone knows I’m only going to be in charge for a day). Implementation of proclamations requires the buy-in and commitment of local managers and staff, as well as the public.

“Agencies are notoriously slow in recognizing changing public values. I think the current emphasis placed on ecosystem management by the BLM, the Forest Service, and other agencies is a response by these agencies to changes in public values that began to take place a decade or more ago. The changes required for true ecosystem management to take place are not easy for these agencies to make, and it is unreasonable to expect all agency employees to support them, at least at first. Nevertheless, the changes are coming, and most employees will, in time, support them.”

LITERATURE CITED

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